

Issue 4

Summer 2010

KENTUCKY DEPARTMENT FOR NATURAL RESOURCES

Natural Resources Review

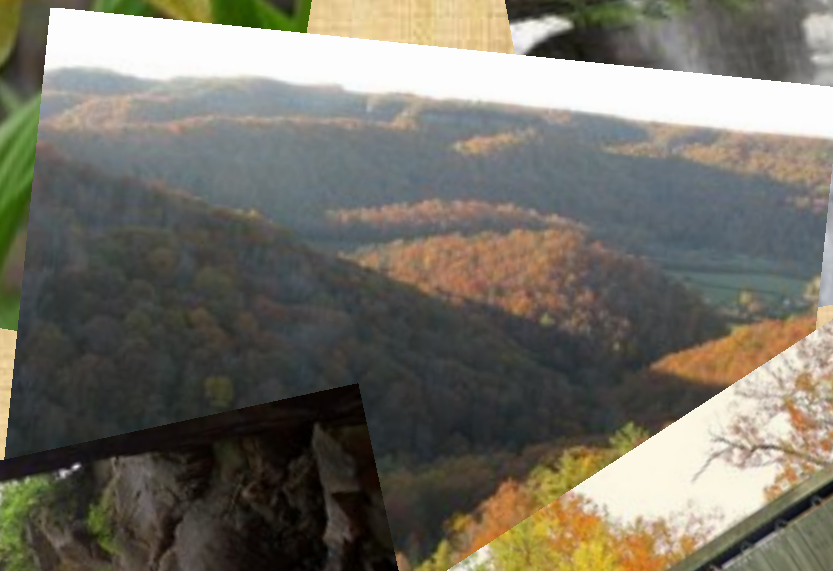


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OUR MISSION STATEMENT

The department, through its divisions and partnerships, provides technical assistance, education and funding to help landowners, institutions, industries, and communities in conserving and sustaining Kentucky's natural resources. In addition, the department inspects timber harvests and mining operations to ensure the protection of our citizens, our environment, and our workers.



Commissioner's Corner

**By Carl E. Campbell, Commissioner
Department for Natural Resources**

Dear Colleagues,

As the Commonwealth's budget woes continue, it appears to me that one of the answers to our nation's economic recovery lies within the area of natural resources. I have spent a lifetime working and observing many indicators that point to the fact that preserving and properly utilizing our natural resources not only reduces green-house gases, but generates jobs and stimulates economic growth in our country.

The U.S. Secretary of Energy recently said, "Coal is likely to be a major and growing source of electricity for the foreseeable future." The Energy Information Administration says, "An additional 21,000 megawatts of coal-based electricity capacity will be needed by the year 2030." Given these informed assessments, the outlook of continued employment seems to be good for the coal communities in the next 20 years. The rest of us in Kentucky will continue to enjoy the residual benefits of coal mining in Kentucky, including the low cost of our electricity compared to other parts of the country. It is important that we continue to regulate this important industry in a manner that protects the workers, the environment, and the public at large, while supporting those companies that provide critical jobs for the Commonwealth.

Interestingly, these projections of increased electricity requirement are made while taking into account the increasing obligations for carbon capture, CO₂ injection, clean coal technologies, and advancements in other alternative fuel usage. These innovative approaches are being encouraged by the federal government and in some cases significantly supported by federal funds. The federal administration has made it a top priority, committing over a billion dollars to clean coal technology. Kentuckians will be employed in the construction of, and the continued operation of those facilities. New opportunities will be provided to our young people going into the fields of engineering, science, and management.

Alternative fuels offer the opportunity to make our Commonwealth a vibrant marketplace. Increasing the use of wood products to generate electricity will require the involvement of more landowners and workers in that industry. Harnessing the power of wind will prove useful in some areas of our state and our farmers will grow more grain, corn, grasses, and trees that will be utilized for the production of fuel and electricity.

Nationally, it is projected that several hundred thousand additional jobs will be created in the many industries mentioned above and I believe that rural states such as ours will be affected the most. Kentucky has 12 million acres of forest, 14 million acres of farmland, and over 17,000 jobs in the coalfields of eastern and western Kentucky. It will be imperative for our Department to lead the efforts in preserving and conserving our natural resources, while cooperating with these industries that are important to all Kentuckians and our nation. We will continue to ensure the safety of all citizens, while protecting the land, air, and water from being adversely affected by these future developments.

Did You Know ?

- As of this printing, the Kentucky Abandoned Mine Lands (AML) Program has expended to date over \$76 million to reclaim lands unregulated or “pre-law” coal mining and provide potable water to thousands of Kentuckians where water sources were damaged by mining.
- The Office of Mine Safety and Licensing has seen a steady increase in the number of mines receiving licenses this year which is an excellent indicator of the demand for increased coal production. Since February 15 Kentucky has gained 64 new or reopened mines (15 underground mines and 49 surface mines). The total number of mines actively operating as of May 21 is: surface-206; underground-174; total-380. New surface mines increased by 31 percent while underground mines saw an increase of 9 percent. Overall, new licensed mines have increased by 20 percent in the last three months.
- The Division of Mine Permits has made remarkable improvement in reducing the number of delinquent mine permits with the numbers reflecting a consistent downward trend for the past five months. The leadership and staff of this division have earned our appreciation for their continuing dedication and focus on eliminating the backlog.
- The Division of Mine Permits reports e-permitting has consistently been increasing, reaching percentages averaging 55 percent in recent months. Last year 49 percent were submitted electronically. Use of electronic permitting has proven to be cost effective for both the coal company and the division and significantly expedites the processing of coal permits.

Photo Credits - Front Page

The following garnered first and second place in the 2010 Earth Day photo competition held by the EEC. The photos are on the front cover of this publication.

Top: Yellow lady-slipper by Amy Covert, Division of Mine Permits
Bad Branch Falls by Brandi Kilburn, Division of Forestry

Middle: Afternoon shadows at Red River George by Dale Burton, Division of Mine Permits

Bottom: Grays Arch at Red River Gorge by Dale Burton, Division of Mine Permits
Switzer Covered Bridge by David Hargis, Division of Conservation

Walter Brumley, Mine Inspector Office of Mine Safety and Licensing

Office of Mine Safety and Licensing employee Walter Brumley has been selected to be recognized in the employee spotlight. Walter is a mine inspector for the Barbourville District office and was also the agency's employee of the month. Whether a person meets Walter on the job or during a personal moment, they will leave with a positive and lasting first impression. He is a dedicated employee,

family member, and friend.

Furthermore, he will happily tell you that the priorities in his life are church, family, and his job. Of the many capable employees in the Barbourville office, Walter was recommended

by Supervisor Ricky Johnson. Walter has worked in the mining industry since 1979. He has been a member of a Mine Rescue Team since 1984 and is currently a member of the Office of Mine Safety and Licensing Mine Rescue Team in Barbourville. Additionally, he has been a member of three National Mine Rescue Teams, two of which won the National Championship Title. His work is exemplary and he completes all required inspections as assigned. He has tremendous knowledge of the many aspects of coal mining and produces outstanding results. Walter gladly assumes additional duties when called upon, and accepts responsibility for his actions and decisions.

He places the safety of coal miners as the number one priority of his job. Walter maintains an outstanding relationship with miners, mine management, and co-workers. Because of this relationship, he is able to substantially promote safety at the mines. He has earned the respect of supervisors, peers, miners and mine operators.

Beyond his employment, Walter is dedicated to helping others.

He is part of his church's mission team which traveled to Poland in 2006 and 2008, and will be making his third trip this year. Each mission trip lasts two weeks, for which Walter uses his personal vacation leave.

Throughout these missions, Walter lives in rural areas about 30 miles outside of Warsaw, the capital of Poland. The purpose of the mission is to help underprivileged and at-risk children. His team distributes food the first week and conducts bible camps the second week. In addition to being a member of his church for the past 40 years, he is an elder of the church and is extremely involved in the music ministry. In every aspect of his life, Walter is dependable, reliable and honest— a wonderful example for all who know him.

Walter and his family reside in Manchester, Kentucky.



Kentucky Mine Rescue Teams Hone Skills in Mine Emergency Drill

Emergency drills vital to mine rescue preparedness

With the recent West Virginia mine explosion and rescue fresh in their minds, the Kentucky “signature” rescue teams felt a renewed sense of urgency to prepare for potential mining disasters in Kentucky. The Office of Mine Safety and Licensing’s (OMSL) twelve mine rescue teams competed in a drill which fulfilled the “contest” requirement mandated by the federal Miner Act. Similar contests are regularly scheduled throughout the year to continually hone and update the skills of Kentucky’s mine rescue teams.

OMSL teams were the only competitors in this drill, which began April 14 and continued through Thursday, April 15 at Jenny Wiley State Park near Prestonsburg, Kentucky. The teams are judged on their ability to safely handle dangerous scenarios and surprise situations simulated for the competition. These contests prepare OMSL mine rescue personnel with training in command center and mine rescue operations to improve their ability to effectively respond to major mining disasters that might occur.

The team members are full-time safety inspectors, safety analysts, or supervisors for the Office and are generally familiar with the mines since they frequently inspect them. Teams waiting to compete are held in a large room, called “lock-up” for up to 6-8 hours, just as they would if a real disaster had occurred. They arrive on the practice field outside without knowing the situation that exists. The team reports to the fresh-air base and sets up communications between a briefing officer and the team. They are given maps of the mine and a scenario of the known situation inside the mine, and they have five minutes to review the situation before beginning. Entering the simulated mine, they concentrate on improving ventilation, making bi-directional gas checks, testing the walls and roof for stability and building supports where necessary. They remove injured miners, treat any who are seriously injured, while dealing with the other problems as they arise.

All of this is done while attached to a “lifeline” which spaces the six men six feet apart in smoke filled situations. In this exercise, they efficiently deal with the situations encountered as they stay in constant communication with the briefing officer. The end result is an efficient rescue in the simulated underground mine involving the recovery of any survivors and the team returning safely to the surface.

Seeing 72 team members, 20 field judges, and another 20-30 organizers in action make this an impressive event to watch. These guys are really tough men doing a tough job who are very passionate about the business of mine rescue. They are competitive and strongly appeal every discount given to them by the impartial judges, knowing that these discounts represent mistakes that could cost a life of a team member or the entire team. After the two day exercise, the men felt they had brushed up on the skills needed. Madisonville Blue was selected as the best team this year.



Pictured Above: The Madisonville Gray team is entering the simulated mine. Below: From the fresh air base, communications are constant with the men inside the simulated mine.



Kentucky and Virginia Partner in First Interstate Arbor Day Celebration

Elementary students from both states plant tree seedlings to create a "forest without borders"

On April 30, 2010, more than 100 students and their teachers from Arlie Boggs Elementary in Letcher County, Kentucky and Appalachia Elementary in Wise County, Virginia planted over 1,000 native hardwood seedlings and wetland plants to promote reforestation and wetland creation on mined lands. The event was hosted by the Cumberland River Coal Company on its surface mining operation located on the Kentucky-Virginia state line. Representatives from the Kentucky Energy and Environment Cabinet, the U. S. Office of Surface Mining, the Kentucky Department for Natural Resources (DNR), the Virginia Department of Mines, Minerals and Energy and the Appalachian Regional Reforestation Initiative (ARRI) organized and participated in the event.

Tree species planted included blight resistant American chestnut, red oak, black walnut, yellow poplar, green ash and red maple. Mini-workshops led by Tom Biebighauser of the U.S. Forest Service focused on establishing forested wetlands and provided participants an introduction in creating wetlands on mined lands. Reforestation of previously mined lands has been encouraged in Kentucky since DNR and the University of Kentucky began researching its viability in 1996. Loose soil prepared according to specific guidelines identified in the Forestry Reclamation Approach (FRA), has resulted in greater tree growth, both in height and survival rates, than many virgin forest soils. Planting native hardwoods provides landowners with a sustainable source of income, improves water quality and offers habitat for forest animals.



Wetlands construction is a new partnership between DNR and the U.S. Forest service, that promises to complement the reforestation initiative by interspersing wetland areas throughout Kentucky's forests. Water fowl, dragonflies and salamanders gravitate to the wetlands providing yet another natural feature to the previously mined lands.

Excitement, enthusiasm and energy from the students combined with a glorious day made the first interstate Arbor Day a memorable event for all participants.

The 2009 Kentucky ARRI Award was presented by DNR Deputy Commissioner Larry Arnett to International Coal Group (ICG) East Kentucky, LLC, for their Peelpoplar facility located near Ransom in Pike County. ICG has become a strong advocate of the FRA approach in their reclamation efforts. In 2008, they began collaborative work with the University of Kentucky in a research project to determine the implications for use of this reclamation approach on long, steep slopes. Accepting the award for ICG were Don Gibson, Roger Mason and Alan Ashley. According to Arnett, "The reforestation of Kentucky is of primary importance and a long-term goal of DNR. I am pleased with the on-going efforts of ICG, the University of Kentucky and the department in achieving progress with this goal."



Deputy Secretary Hank List and Deputy Commissioner Larry Arnett present the Arbor Day award to ICG East Kentucky for their reclamation efforts.

Legislative Update for the Department for Natural Resources

By Michael Mullins

The following DNR supported legislative proposals were passed during the 2010 session of the General Assembly:

HB 283 – Sponsor: Rep. Jim Gooch

The statutes that establish permit fees on original coal mining applications, major and minor revisions, renewals, and transfers include language that indicates permit fees shall bear a reasonable relationship to the cost of processing an application. These amounts have been capped at \$375 since 1982 and could not be changed without legislative action.

After discussion with the coal industry and legislative leaders, an agreement was reached and House Bill 283 was passed with an emergency clause and became effective April 8 upon signature of the Governor. The bill increased amounts for all permit application types from a flat rate of \$375 per application to:

- \$2,500 for an original application;
- \$1,750 for a major revision or amendment; and
- \$750 for a minor revision, renewal or transfer

To ensure the Division of Mine Permits (DMP) benefited from the increased permit fees, KRS 350.139 was amended to direct all amounts over the original \$375 be deposited into an account strictly for the use of the DMP. One-third of the original amount will continue to be transferred to the fiscal courts of the county in which the permitted operation is located.

HB 268 - Sponsor: Rep. Jim Gooch

In an attempt to decrease the number of fly rock incidents throughout the Commonwealth, the Division of Mine Reclamation and Enforcement (DMRE) proposed to increase the number of training hours required to renew a blaster license. This proposal increased the number of hours from 16 hours over a three year period to eight hours annually over a three year period. This is a net increase of eight hours and allows only four of those hours to be obtained from attending a conference unless otherwise approved by the department.

In the closing days of the legislative session the provisions of Senate Bill 63 were attached to HB 268. These provisions increased the amount of mining subsidence insurance from \$100,000 to \$300,000 per structure. This bill will take effect July 14, 2010.

HB 215 – Sponsor: Rep. Jim Gooch

House Bill 215 was a bill originally filed in order to fix technical issues with a statute pertaining to nature preserves. With an agreement from industry and cabinet representatives, a provision to allow the DMRE to send Notices of Noncompliance and Cessation Orders via electronic certified mail was attached to HB 215. This proposal will significantly decrease the amount of money the division spends sending these documents out by standard certified mail and should increase the speed at which these documents are delivered. This proposal will take effect July 14, 2010.

Forestry Employee Receives Outstanding Service Forester Award

James Morris receives honor from the Kentucky Woodland Owners Association

Kentucky Division of Forestry (KDF) employee James Morris recently received the Outstanding Service Forester Award from the Kentucky Woodland Owners Association (KWOA). Morris, who works in the Green River District, has advanced forest management through his work with private landowners since 1995. He was selected by KWOA as the first recipient of the annual award based on his accomplishments over the past few years.

Since 2007, Morris has provided technical assistance to approximately 180 woodland owners, prepared 112 forest stewardship plans, and inspected nine American Tree Farms for certification. As a service forester, he primarily works with private landowners who manage their woodlands using sustainable forestry practices. Morris' responsibilities also include marking timber for harvest and timber stand improvement, planting seedlings, conducting forestry education programs and fighting forest fires.

"James is highly respected and appreciated by landowners throughout the Green River District," said Henry Duncan, KWOA Vice President. "His knowledge of woodland management and cost-share programs has enabled landowners to better manage their woods for timber, wildlife habitat, watersheds and outdoor recreation."

Morris serves Christian, Logan, Todd and Webster counties and despite a demanding workload, he makes time to work cooperatively with other resource agencies including the Conservation Districts, County Extensions, Department of Fish and Wildlife Resources, Natural Resource Conservation Services and Farm Services Agency.

KWOA is a non-profit membership organization founded in 1994 for the purpose of promoting the quality of our woodlands. The organization is controlled exclusively by independent Kentucky woodland owners whose goal is to help Kentucky forest landowners attain long-term value from their forestry operation while maintaining a healthy, beautiful forest.



KWOA Vice President Henry Duncan presents the Outstanding Service Forester Award

KDF is fortunate to have the dedication, experience and leadership of employees like Mr. Morris who provide an invaluable service to landowners and play an important role in protecting the health of our forest lands.

AML UPDATE

More than 180 households in Wolfe County will soon be able to turn on their tap and receive potable drinking water, thanks to a project funded by the Department for Natural Resources' Division of Abandoned Mine Lands (AML). Phase one of the Mary-Bethany/Flat water supply project in Wolfe County will begin in July by G & W Construction Co. Inc. of Morehead. Project costs total \$1,174,129.32. Phase two is scheduled to begin in 2011. According to Campton Mayor Gay Campbell, "residents in the area have been without drinking and bath water since the 1970s due to past coal mining. Everyday, I am asked by anxious and excited people where the waterline is. The city and people here are thankful for AML stepping up for our community."

First Lady Jane Beshear Holds Earth Day Event

Division of Forestry plays a role in Earth Day event held at the Executive Mansion

On April 22, First Lady Jane Beshear planted a tree in the front lawn of the Executive Mansion in recognition of Earth Day. The Valley Forge Elm was planted to replace a tree that had been severely damaged in last year's ice storm. Mrs. Beshear hosted a class from Bridgeport Elementary in Frankfort to help with the planting and to learn from the environmental event. She kicked off the event by talking to the group about environmental issues and touched on the three R's of environmental improvement- reduce, re-use, and recycle. On hand from the administration to assist with the educational event were Secretary of the Finance and Administration Cabinet, Jonathan Miller, and Secretary of the Energy and Environment Cabinet, Len Peters.

Following the tree planting, the children heard from Sara Gracey, representing the Division of Forestry. Sara gave an educational talk about the importance of trees and presented each student with a redbud seedling grown in one of the division's state-owned nurseries. She asked them to plant the tree and watch it grow over the next 20 years or so and be proud of what they have done for the earth. After the ceremony Sara took questions from the students. To show her appreciation for the children and their participation, Mrs. Beshear gave each student a homemade cookie to enjoy on the bus ride back to the classroom. Photos by DNR staff.



Sec. Len Peters (left) First Lady Jane Beshear (middle) and Sec. Jonathan Miller (right) help students shovel in the soil at the event.



Sara Gracey explains tree planting procedures to the students

Special Thanks

A partnership between the Division of Forestry, the Division of Conservation, and the Conservation Districts have once again ensured a successful tree planting season. As a result of their efforts, 96 of the state's 121 conservation districts purchased tree seedlings through the division. The majority took advantage of the division's offer to match a portion of seedlings purchased with white pine seedlings.

146,570 seedlings were purchased and the division provided 102,580 matching seedlings for a total of 249,150 seedlings distributed and planted.

Our sincere thanks to the Divisions of Conservation and Forestry, as well as the participating Conservation Districts for making this partnership such a success.

Kentucky Division of Forestry's Michael Froelich Named Tree Farm Inspector of the Year

Kentucky Forest Industries Association (KFIA) honors Forestry employee at 45th annual meeting

Michael Froelich was recently honored as the 2009 Kentucky Tree Farm Inspector of the Year at the Kentucky Forest Industries Association (KFIA) 45th Annual Meeting in Bowling Green. Froelich is a service forester for the Kentucky Division of Forestry and has helped advance forest management through his work with private landowners and the Kentucky Tree Farm Program since 2007.

Froelich, who works in the Southeastern District, completed five new tree farm inspections and recertified two tree farms last year earning him recognition from the Kentucky Tree Farm Committee. Froelich conducted the inspections to ensure that sustainable forestry practices were being implemented by the landowners and to determine certification status for each farm. In order to become a certified Tree Farm and maintain certification, landowners must implement a management plan based on strict environmental standards and pass an initial inspection and subsequent inspections every five years.

Kentucky has over 800 certified tree farms owned by private landowners who manage their forests for a wide range of environmental, economic and social benefits. Tree farmers share a unique commitment to protect wildlife habitat, watersheds soil, and provide recreation for their communities while producing wood for America's industries. These individuals hold the key to sustaining our forests.



Kentucky Tree Farm Committee Chair Robert L. Volk presents KDF Service Forester Michael Froelich with Inspector of the Year award.

The Kentucky Tree Farm Committee is sponsored by the Kentucky Forest Industries Association, a statewide association promoting the forest products industry of Kentucky since 1965. The committee is an integral part of the American Tree Farm System, advocating sound forest management through sustainable forestry.

For more information about the program or how you can become a certified Tree Farmer, contact Bob Bauer at 502-695-3979 or Pam Snyder at 502-564-4496. More information is also available online at:
<http://www.kytreefarm.org/> or
<http://www.forestry.ky.gov/programs/stewardship/American+Tree+Farm+System.htm>.

Mine Safety Initiative

OMSL is currently developing a paperless mine safety analyst program which will enable information uploads from the inspector's wireless notebook while in the field. When a job analysis is done, the miner's information will be simultaneously matched with the Mine Safety Review Commission (MSRC) sanctions list to identify any miner who is working with a suspended or a revoked miner card. Follow-up with the company and the miner will ensure compliance with the decision of the MSRC.

Environmental Quality Commission honors Ten Individuals, Groups with Earth Day Awards

Stand-outs recognized for significant contributions to the environment

The Kentucky Environmental Quality Commission celebrated the 40th anniversary of Earth Day on April 16 with its annual awards ceremony at Berry Hill Mansion in Frankfort. Environmental Protection Agency Region 4 Administrator Stan Meiburg, the keynote speaker, told the crowd of nearly 100 that environmental protection efforts can spur the economy. "Well conceived, effectively implemented environmental protection is good for economic growth. We all want a clean environment and we all want a strong economy," he said.

The 2010 Earth Day Award recipients partnering with DNR are:

Campbell County Conservation District was recognized for its land conservation efforts. The district, through the formation of a farmland work group committee, conducted a 'Cost of Community Services' study, an agriculture industry profile and a farmer survey. The results of these reports launched the district's efforts to promote agriculture land conservation. The district also was applauded for its partnerships with other organizations across northern Kentucky.

Millie and Frank Anderson operate a 125-acre farm in Shelby County with 20 head of cattle and 18 head of sheep. The Andersons renovated their pastures, practice rotational grazing to reduce erosion in their creeks, and follow a nutrient and pest management plan. They installed fencing to keep their livestock out of the creeks on their farm and installed pipeline and tanks so that the cattle and sheep are provided an alternative source of water. To repair a heavily used area of land, they installed a livestock trail and walkway and diversion ditches to protect the area from overland surface flow of water.

Save Kentucky's Hemlocks is a partnership of citizens, nonprofits and government agencies working together to save eastern hemlocks from the impacts of Hemlock Woolly Adelgid (HWA). Save Kentucky's Hemlocks has raised public awareness, provided outreach, organized fundraising efforts and efficiently allocated resources so that combating HWA in Kentucky can be swift and effective. To date, more than 15,000 trees have been treated in some of Kentucky's most pristine hemlock forests. The group has organized demonstrations and trainings for public land managers, concerned citizens and volunteer groups working to minimize the spread of HWA through detection and treatment. The partnership includes the following Kentucky agencies: Natural Lands Trust; Mountain Association for Community Economic Development; Kentucky State Nature Preserves Commission; Department of Fish and Wildlife Resources; Division of Forestry; The Nature Conservancy; Kentucky Department of Parks; Kentucky Division of Water; Soil Conservation Districts; University of Kentucky Cooperative Extension Service; and the Pine Mountain Settlement School.

A.L. Sinclair of Adair County works tirelessly to improve his community's environment. In addition to starting a recycling program, Sinclair has spearheaded a roadside cleanup program and an initiative to remove decades of accumulated trash in sinkholes throughout the county. His latest effort will substantially improve the quality of groundwater in Adair County.

Sandy Whitaker of the Rockcastle County Conservation District has been called 'the main force' behind the district's accomplishments, two of which are the P.R.I.D.E. and C.A.I.P. programs. Sandy is a 12 year employee of the conservation district and is extremely helpful to the community. She wears several hats—renting equipment, administering cost share funds, hosting banquets, promoting environmental education programs, and administering the dead animal pick-up program.

Spring Forest Fire Hazard Season Ended April 30

Busy season has forestry officials concerned

Forest fires have kept the Kentucky Division of Forestry busy this spring. Although the spring forest fire hazard season officially ended April 30, the potential for wildfires can occur any time of year. This potential has forestry officials concerned as reduced staff and other cutbacks hinder the ability to suppress wildfires and ensure public safety.

Since January, 928 fires have burned approximately 32,404 acres in the state, most of which occurred during the driest period from April 1 – 21 with 551 fires burning 28,439 acres. At this time last year, wildfires had burned 29,491 acres and in 2008, wildfires had burned only 17,449 acres by the end of April.

Over 60 percent of forest fires in Kentucky are intentionally set. Last year, fires started by arsonists burned nearly 33,000 acres. Citizens who witness suspected arson activity are asked to call the nearest Kentucky State Police post or the Target Arson Hotline at 800-27-ARSON. They can also call the nearest district office of the Kentucky Division of Forestry.



Mark Wiedewitsch, Forester from the South Central District, Campbellsville KY

Outdoor burning can also lead to forest fires. Before conducting any outdoor burning, citizens are advised to be familiar with the applicable regulations. Citizens should contact the Division for Air Quality, the Division of Waste Management, as well as the Division of Forestry and local government officials to ensure that they are complying with all outdoor burning laws.

To reduce the risk of wildfire caused by outdoor burning, the division recommends the following:

- Clear a safe zone that is wide enough to prevent the escape of fire;
- Keep a supply of water and a rake or shovel readily accessible;
- Do not leave a fire unattended;
- Burn only when the wind is calm and the humidity level is high;
- Extinguish fire completely if conditions become windy;
- Keep burn piles small to allow quick control of the fire if necessary; and
- Locate burn piles an adequate distance from structures and utilities.

What is Non-coal Mining in Kentucky?

Natural Resources Department issues permits and inspects all mining and blasting in the state
Jim McKenzie

The non-coal review branch of DMRE regulates the surface mining of all non-coal minerals in the state of Kentucky. The non-coal minerals are limestone, dolomite, sand, gravel, clay, fluorspar, and rock asphalt. They also regulate any surface disturbance when dredging rivers for creek sand or gravel and other vein minerals. In addition, the non-coal branch regulates the surface disturbance of oil shale mining. There are currently 234 permitted non-coal sites across the state covering 47,000 acres.

The most common non-coal minerals mined in Kentucky are limestone, sand, and gravel. Unlike a surface coal mine, which may have mining completed within a couple of years in a specific area, a non-coal mine such as limestone will typically be in operation for as many as 50 to 75 years or more. A limestone mine will generally be mined in benches, creating a pit as they work their way down through the limestone. In some areas, once a highwall is established, the company may choose to mine the area underground. In almost all cases in underground limestone mining, the roof is solid and does not create roof fall or subsidence problems. Once mining has been completed in limestone, the pit fills with water and the area can be used for recreational purposes. Some are used for pay lakes or boating recreation while others have been used for scuba diving activities due to the clear water in the pit. In some cases, mined out deep mines have been used for storage areas and even offices.

Sand and gravel mines, more prevalent in western Kentucky than in eastern Kentucky, are typically smaller than limestone mines. These mines do not require any blasting to remove the overburden. After topsoil removal, the sand and gravel are scooped up and processed through a screen which separates the different size aggregates for distribution. Once a sand and gravel operation is completed, the area will be graded, covered with topsoil and seeded for hay and pastureland.

Non-coal permits are inspected for compliance on an average of every four to six weeks. Photos by DNR staff



Limestone mining using the bench method



Reclamation of a limestone pit provides recreation and habitat



Reclamation of post-mined land

Division of Forestry Extends a Helping Hand to Metcalfe County after Flooding



Major flooding during the first week in May had emergency crews working feverishly to prioritize and address the needs of Metcalfe County residents. In the above photographs, Division of Forestry employees Ricky Parnell and Kenneth Pyles use their equipment to clear and repair the road. The road was underwater on one end and washed out on the other, trapping several residents behind the high water. A washed out bridge and large hay bales along the road made their rescue even more complicated. The foresters drained the water covering the road, graded it and applied several truckloads of gravel provided by the county. At this point, they could clear the other obstacles and get the residents out. County Judge Executive Greg Wilson applauded the division's two-day effort and its donation of resources.

Photographs by Brian Yager, District Forester

Blasting – A Citizen's Guide

Explosives and Blasting Branch

Why do companies blast? Earth moving equipment cannot break up all the natural bedrock in Kentucky. Explosives are used in construction, quarrying, and mining to fragment rock layers so that the mechanized equipment can move it. Blasting operations include trench blasting to install utility lines, fracturing limestone used for roads, and fragmenting overburden when mining coal. Small amounts of explosives are used in demolition of buildings and in some cases when installing utility poles. The Explosives and Blasting Branch licenses all blasters and issues all permits for explosives purchases and storage facilities. In addition, they inspect and regulate all blasting operations state-wide. Citizens close to these operations can request inspections at any time.

What causes a house to shake? Although proper design controls the adverse effects from the use of explosives outside the blast area, people can feel the effects of blasting operations. It is understandable to be concerned about blasting when your home is shaking. When explosives are detonated in rock, two things happen: a shock wave is produced and gas pressure is formed. The shock wave creates micro fractures around the blast hole - limited to a few diameters of the blast hole, but generally 30 feet or less. As the gas expands into these fractures, the rock breaks. In fact, the gas pressure is what physically fragments the rock. Each blast is designed to consume the energy produced by the explosives in the breaking of the rock. However, a small amount of energy will radiate away from the blast site.

The ground movement that one feels is from the shock wave, while the venting of the expanding gas and movement of the air caused by the displaced material will create a slight air overpressure. What you “feel” inside the house is a combination of both effects. Ground vibrations travel through the earth at several thousands of feet per-second, while the effects to the atmosphere move at approximately the speed of sound. How your house will respond depends on several factors that are related to the type of blasting operation, distance to your property, and the weather. For example, blasting a trench for a sewer line up the middle of a street in front of a house will create a high frequency shock wave and very little air overpressure. The vibrations pass very quickly. On the other hand, one’s house will respond noticeably longer from blasting on a surface coal mine because greater volumes of material must be moved requiring larger blast designs than those needed for the trench. Often blasts are hundreds of feet away, and the ground movement begins to slow its rate of travel due to the distance. Even when farther away, the ground vibration will reach your property before the air overpressure.

If my house shakes, it must have damage? Much research has been done in order to determine the extent of damage that can be expected from blasting vibrations. The United States Bureau of Mines (USMB) performed thorough research on the effects of coalmine blasting on residential structures. These studies involved mounting seismographs inside homes adjacent to a mine site and making observations during the blasting. As the blasting vibration excites a particle, it moves about its point at rest in three dimensions, not in a straight line. The seismograph measures the rate of the movement in three separate planes to determine the velocity of the vibration.

Continued on the next page....



Arial photo- Drilling precise holes and setting charges in this “toe” will enable operators to excavate the area and remove the coal. No debris is allowed to travel off the permitted site.

Blasting – A Citizen's Guide– Continued...

Explosives and Blasting Branch

How is blasting regulated? The USMB's reports combined with recommendations from other research studies provide the basis for current regulations. Kentucky's laws and regulations restrict ground movement and air overpressure to specific limits depending on the type of blasting operation. Construction and quarry blasting is limited to ground movement of 2 PPV and air overpressure is limited to 133 dB. These differ from those on coal mining operations, which limit ground movements from .75 PPV to 1.25 PPV depending on distance from the blast. On coalmines, compliance may involve a combination of PPV and the frequency (Hz) of the ground movement. Air overpressure from coal mine blasts is limited to 133 dB at 6Hz. Records are kept on explosives from manufacture to end-use. Cross checking the records allows the explosives and blasting branch to ensure that all explosives are accounted for, making it difficult to falsify shot reports.

When the Explosives and Blasting inspector documents a violation, a citation and/or a notice of non-compliance is written to the blaster and/or the company performing the work. Liability insurance is required for all blasting operations in Kentucky. Settlement of the monetary amount of damage claims is a civil matter. DMRE also responds to all citizens complaints and investigates on their behalf.

Any questions concerning blasting and explosives can be addressed by calling 502-564-2340.

Right: Most blasting in Kentucky such as this shot is done by highly qualified contractors in the mining industry. Blasters must obtain certification and meet continuing education requirements annually. Photo by Ralph king.



Holes are accurately located and carefully drilled for a trench line blast. These two operators are drilling holes for sewer line in Madison County . Photos by blasting staff.



Kentucky Envirothon Competition Tests Students Environmental Knowledge

Fayette County wins state competition held in May at Kentucky Leadership Center

Fayette County students from Paul Lawrence Dunbar High School won the Kentucky Envirothon May 20-21. The competition began with 40 teams from across the state contending for the top five spots from each of the two regional competitions. The regional competitions were held in April at the Baker Natural Area and Morehead State University Farm. The students were tested in five areas: soils, aquatics, forestry, wildlife, and this year's issue- "Protection of Groundwater through Urban, Agricultural and Environmental Planning." During the state competition, students were also judged on an oral presentation based on a scenario dealing with the current issue.

Finishing behind Fayette County, the second and third place teams were DuPont Manual in Louisville and Southwestern High School in Somerset, respectively. Fayette County won the site competition in the oral competition, soils, wildlife and current issue. DuPont Manual won the forestry and aquatics site. Also competing in the state contest were teams from Oldham County, Todd County, Apollo in Owensboro, Logan County, and Daviess County.

Envirothon is a competitive, problem-solving, natural resources experience for students in grades 9 through 12. While competitive, education is the bottom line. With the support of natural resource professionals, students are trained in the solutions of real-life environmental problems.

Teams of five students work to solve environmental issues. These teams are tested on their knowledge of Kentucky's natural resources at five "in the field" test stations.



Southwestern Team working at the soils site

Each station covers a separate topic addressing soils, forestry, wildlife, aquatics and a current environmental issue. Through hands-on experiments, analysis and use of critical thinking skills, the teams answer a set of questions at each station.

"This year's state contest was very competitive and the close competition demonstrated the hard work of each of the state teams" remarked Division of Conservation Director Steve Coleman. "This tough state contest will prepare Kentucky's winning team to finish in the top level at the national contest. We wish Fayette County great success at the Canon Envirothon in Fresno, California in August, 2010."

Sponsors of the Kentucky Envirothon are: Kentucky Association of Conservation Districts, Kentucky Farm Bureau, Kentucky Department of Agriculture, Farm Credit Services, Kentucky Department of Fish and Wildlife Resources, Kentucky Association of Conservation Districts' auxiliary, several local conservation districts. Others assisting with the competition include: Kentucky Division of Forestry, Kentucky Division of Water, and the Kentucky Division of Conservation.



Winning team, Fayette County from left to right: Becca Fleischman, Darshali Vyas, Arlene Wang, Ranajay Sen, and Alex Fleischman.

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Photo by
J. Hamon